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Personality Traits, Remote Work and Productivity

The Covid-19 pandemic generated a massive and sudden shift towards teleworking. Survey evidence suggests that remote work will stick in the post-pandemic period. The effects of remote work on workers' productivity are however not well understood, some workers gaining in productivity whereas others experience the opposite. How can this large heterogeneity in workers productivity following the switch to teleworking be explained? In this brief, we discuss the importance of personality traits. We document strong links between personality, productivity, and willingness to work from home in the post-pandemic period. Our results suggest that a one-size-fits-all policy regarding remote work is unlikely to maximize firms' productivity.



Introduction

The Covid-19 pandemic triggered a large and sudden exogenous shift towards working from home (WFH). Within a few months in Spring 2020, the share of remote workers increased from 8.2 percent to 35.2 percent in the US (Bick et al., 2020), and from 5 percent to more than 30 percent in the EU (Sostero et al., 2020). Surveys of business leaders suggest that WFH will stick in the post-pandemic period (e.g., Bartik et al., 2020).

The prevalence of teleworking will ultimately depend on its impact on workers' productivity and well-being. This impact however remains ambiguous, some studies reporting an overall positive impact, some studies a negative one. Overall, the balance of these pros and cons can vary greatly across individuals. The existing literature emphasizes the importance of gender and occupation for workers' productivity under WFH arrangements, but a large share of this heterogeneity remains unexplained.

In a recent paper (Gavoille and Hazans, 2022) we investigate the link between personality traits and workers' productivity when working from home. Importance of non-cognitive skills, in particular personality traits, for individual labor market outcomes is well documented in the literature (e.g., Heckman et al., 2006; Heckman and Kautz, 2012). In the context of WFH, soft skills such as conscientiousness or emotional stability, are good candidates for explaining heterogeneity in relative productivity at the individual employee level.

The Latvian context provides an ideal setup for studying the effect of teleworking on productivity. First, Latvia has a large but unexploited potential for teleworking. Dingel and Neiman (2021) estimate that 35 percent of Latvian jobs could be done remotely, which is about the EU average. However, prior to the pandemic only 3 percent of the workforce was working remotely – one of the smallest figures in the EU. Second, the Latvian government declared a state of emergency in March 2020, which introduced compulsory WFH

for all private and public sector employees, except for cases where on-site work is indispensable due to the nature of the work. This led to a six-fold increase in the share of remote workers within a couple of months. This stringent policy constitutes a massive exogenous shock in the worker-level adoption of WFH, well suited for studying.

Survey Design

To study the link between personality traits, teleworking, and productivity, we designed an original survey, implemented in May and June 2021 in Latvia. The target population was the set of employees who experienced work from home (only or mostly) during the pandemic. To reach this population, we used various channels: national news portals, social media (Facebook and Twitter) and radio advertisement. More than 2000 respondents participated in the survey, from which we obtained more than 1700 fully completed questionnaires.

Productivity and Remote Work

In addition to the standard individual characteristics such as age and the likes, we first collect information about respondents' perception of their own relative productivity at the office and at home. More specifically, we ask "Where are you more productive?". The five possible answers are "In office", "In office (slightly)", "No difference", "At home (slightly)" and "At home" (plus a sixth answer: "Difficult to tell"). Table 1 provides a description of the answers. Roughly one third of the respondents reports a higher productivity at home, another third a higher productivity at the office, and one third do not report much of a difference. This measure of productivity is self-assessed, as it is the case with virtually any "Covid-19-era" paper on productivity. Note however that our question is not about absolute productivity as such, but relative productivity of teleworking in comparison with productivity at the office, which is arguably easier to self-assess.



Second, we ask “Talking about the job you worked at mostly remotely, and taking into account all difficulties and advantages, what would you choose post-pandemic: working from home or in office for the same remuneration (if you had the choice)?” The five possible answers are “Only from home”, “Mostly from home”, “Indifferent”, “Mostly in office”, “Only in office” (and a sixth option: “Difficult to tell”). The main aim of this question is to study who would like to keep working remotely in the post-pandemic period, irrespective of productivity concerns. Notably, the answers are much different than from the productivity question (see Table 1), which suggests the latter does not reflect preferences.

Finally, we ask respondents about the post-pandemic monthly wage premium required by the respondent to accept i) working at the office for individuals preferring to work from home; ii) working from home for individuals preferring to work at the office. Median values of these premia for workers with different preferences are reported in Table 1 (panel C). These values appear to be economically meaningful both in absolute terms and relative to the median net monthly wage in Latvia (which was 740 euro in 2021), reinforcing the reliability of the survey.

Table 1. Outcome variables

A. Productivity: <i>Where are you more productive?</i>	In office 20.6%	In office (slightly) 16.2%	No difference 32.3%	At home (slightly) 9.9%	At home 21.1%
B. Teleworking: <i>Where would you prefer to work post-pandemic?</i>	Only in office 6.5%	Mostly in office 20.6%	No difference 9.9%	Mostly at home 46.4%	Only at home 16.7%
C. Reservation values, <i>By how much should your monthly pay go up to make you change your mind?</i> (Median, in EUR)	400.0	200.0		250.0	500.0

Source: reproduced from Gavoille and Hazans (2022).

Measuring Personality Traits

The survey contains a section aiming at evaluating the personality of the respondent through the lens of the so-called Five Factor Model of Personality. The psychometrics literature offers several standardized questionnaires allowing to build a measure for each of these five factors – Openness

to Experience, Agreeableness, Extraversion, Emotional Stability and Conscientiousness. We rely on the Ten-Item-Personality-Inventory (TIPI) measure (Gosling et al., 2003). This test is composed by only ten questions, making it convenient for surveys, and it has been widely used, including in economics. As simple as this approach seems, the performance of this test has been shown to be only slightly below those with more sophisticated questionnaires, and to provide measures highly correlated with the existing alternative measures of personality traits.

Results

Overall, the results indicate that personality traits do matter for productivity at home vs. at the office. The personality trait most strongly related to all three outcome variables is Conscientiousness. Controlling for a battery of other factors, individuals with a higher level of conscientiousness are reporting a higher productivity when working from home as well as a higher willingness to keep working from home after the pandemic. This link is not only statistically significant but also economically meaningful: an individual with a level of conscientiousness in the 75th percentile is 8.4 percentage points more likely to report a higher productivity from home than a similar individual in the 25th percentile. Considering that the sample average is 31 percent, this difference is substantial.

Previous studies documented a positive correlation between Conscientiousness and key labor market outcomes such as wage, employment status and supervisor evaluation. A usual concern of employers is a possible negative selection of workers in teleworking. Observing that highly conscientious workers are more willing to work from home, where they are more productive, suggests that firms do not need to exert a very strict control on employees choosing to telework.

Openness to Experience shows a similar positive relationship with productivity. Extraversion on the other hand is only weakly negatively related to



productivity. The relationship between this trait and willingness to work from home is however much stronger. These findings are intuitive: workers with a high Openness to Experience are more likely to cope easily with the important changes associated with switching to WFH. On the other hand, extravert individuals may find it more difficult to remain physically isolated from colleagues.

The literature studying the relationship between WFH and productivity suggests a conditional effect based on gender. In parallel, the literature investigating the role of personality traits on labor market outcomes also documents gender-specific patterns. As our work builds on these two strands of literature, we provide a heterogeneity analysis of the personality traits/productivity relationship conditional on gender.

When disaggregating the analysis by gender, it appears that the relationship between personality traits and productivity is stronger for women than for men. Conscientiousness and (to a smaller extent) Openness to Experience have a strong positive relationship with relative productivity of teleworking for women, while Extraversion and Agreeableness feature economically meaningful negative relationships. Noteworthy, the effects of Agreeableness and Openness to Experience do not concern the probability to be more productive at the office but only the willingness to work from home after the pandemic. For men, only Conscientiousness is significant, with a much smaller magnitude than for women.

Conclusion

We document that personality traits matter for changes in productivity when switching to a WFH regime. In particular, individuals with high levels of Conscientiousness are much more likely to report a better productivity from home than from the office. Additionally, Openness to Experience and Extraversion also do play a role.

Taken together, these results suggest that a one-size-fits-all policy is unlikely to maximize neither

firms' productivity nor workers' satisfaction. It also highlights that when estimating firm-level ability in switching to remote work, characteristics of individual workers should be considered. In particular, employers practicing remote work should invest in socialization measures to compensate the negative effect of teleworking on the wellbeing of more extravert workers. Finally, several surveys (e.g., Barrero et al., 2021) document that more than a third of workers in the US would start looking for a new job allowing (some) work from home if their current employer would impose a strict in-office policy. Our results support this finding but also indicate that the opposite also holds: some workers would strongly oppose to remaining in a WFH setup after the pandemic. Personality traits are important determinants of the value attached to working from home.

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